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EXHAUST EMISSIONS FROM A PASSENGER CAR EQUIPPED WITH THE "PASER MAGNUM ELECTRONIC ANTI-POLLUTION ENGINE ECONOMIZER'

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National Air Pollution Control Administration
Ann Arbor, Michigan

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Exhaust Emissions From a Passenger Car Equipped With The "Paser Magnum Electronic Anti-Pollution Engine Economizer"

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15. Supplementary Notes

16. Abstracts

The objective of this project was to study the exhaust emission characteristics of the Paser Magnum device on a used vehicle. This device operates on the principle of electro-magnetic induction, its circuits tapping electro-static energy from the firing spark. This energy is directed to the non-firing cylinders where it bombards the fuel molecules with radiation preparing the mixture for more complete combustion. The vehicle chosen for the test was a 1963 Chevrolet Impala equipped with a Retro-fit kit for low emissions. The following tests were conducted: (1) a closed, constant volume sampling technique using 9 repeats of the Federal emission test cycle (CVS); (2) a closed, constant volume sampling technique using the LA4-S3 driving schedule. Samples were analyzed for carbon monoxide, carbon dioxide, hydrocarbons, and oxides of nitrogen. The results obtained show no significant effect of the Paser Magnum on exhaust emissions or fuel economy.

17. Key Words and Document Analysis. 17a. Descriptors

Air pollution
Exhaust emissions
Automobiles
Tests
Sampling
Carbon monoxide
Carbon dioxide
Hydrocarbons
Nitrogen oxides
Fuel consumption
Air pollution control equipment

17b. Identifiers/Open-Ended Terms

Paser Magnum Engine Economizer
Retrofit devices
Constant Volume Sampling Test (CVS)
LA4-S3 Driving Schedule

17c. COSATI Field/Group 13B

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
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Device Tested

The exhaust emission characteristics of the Paser Magnum device on a used vehicle were desired for use by this and other government agencies. The Paser Magnum is described by the manufacturer as "using the principle of electro-magnetic induction the circuits of the Paser Magnum tap electro-static energy from the firing spark. This energy is directed to the non-firing cylinders, where it bombards the fuel molecules with radiation, preparing the mixture for more complete combustion." For the purpose of this test a 1963 Chevrolet Impala equipped with the General Motors Retro-fit kit for low emissions was used. The primary reasons for selecting this vehicle were the amount of background data available and the availability. As there is no distributor modification with this kit, the effects of the Paser Magnum should be obvious. This vehicle was equipped with manual transmission, and a 283 cubic inch engine.

Test Procedure

The following tests were conducted:

1. A closed, constant volume sampling technique using 9 repeats of the Federal emission test cycle. (CVS)

2. A closed, constant volume sampling technique using the LA4-S3 driving schedule as specified for 1970 and later testing.

Closed cycle data were taken using a constant volume sampling technique. Bag samples were analyzed using non-dispersive infrared analyzers for carbon monoxide and carbon dioxide with hydrocarbons measured using a flame ionization detector. The Whittaker "NOx Box" was used for determination of oxides of nitrogen in the CVS sample.

Emission Results

The data shown in Table I compare tests run both with and without the Paser Magnum device. These tests cover the complete range of emission measuring techniques and give a good insight into the effect of various devices. The results obtained show no significant effect of the Paser Magnum on exhaust emissions or fuel economy.

Conclusions

1. The Paser Magnum shows no significant effect on exhaust emissions.

2. The Paser Magnum shows no effect on fuel economy over the driving cycle.

Table I

1963 Chevrolet Impala

9 Cycle CVS	HC gpm	CO gpm	NO gpm	Fuel kg
Without device	9.0	87.1	1.7	1.6
With Paser Magnum	9.1	81.2	2.2	1.5
1972 FTP				
Without device	6.0	92.0	1.6	1.6
With Paser Magnum	7.6	108.0	2.1	1.6